

## Hydroponics - at Home and for Beginners

by [trebuchet03](#) on September 8, 2006

### Table of Contents

Author: <a href="#">trebuchet03</a> .....	2
License: Attribution Non-commercial Share Alike (by-nc-sa) .....	2
Intro: Hydroponics - at Home and for Beginners .....	2
step 1: BOM - Bill of Materials .....	3
step 2: Make a Home For your Pots .....	4
step 3: Aeration .....	5
step 4: Sterilization .....	5
step 5: Initial Fill .....	6
step 6: Introducing Plants and prepping medium .....	7
step 7: Starting From Seed .....	8
step 8: Maintenance .....	8
step 9: Options .....	9
step 10: Pests .....	9
step 11: Lighting .....	9
Related Instructables .....	10
Advertisements .....	10
Comments .....	10



Author: **PRO** trebuchet03 [author's website](#)

I have a degree in Mechanical Engineering... And secret love for aerodynamics....

I ride a recumbent bike... what of it?

I like aquariums, bacon, efficiency and the feeling of putting on warm pants when it's cold inside.

My goal is to open my own start up or to work for another one. I feel it more important to utilize my creativity than to accept a higher paying job. Others I know, with a variety of engineering degrees working for companies I shouldn't name have had their hobbyset reduced to drinking and TV and it's typical to hear another complaint about another reason they don't like where they work..... Not for me.

I would like to live more on what you would like to live without. Have anything you'd like to live without?

eMail: trebuchet03@gmail.com

**License:** [Attribution Non-commercial Share Alike \(by-nc-sa\)](#)

## **Intro: Hydroponics - at Home and for Beginners**

**I am pushing this project early. I want to clear out my unpublished projects so this is now public. Hopefully it will force me to finish sometime soon (all I need to do now is buy plants)**

If you've heard of this word, it may have been on the news due to some illegal drug growing operation in someone's garage. That, or you saw the word on the packaging on some very good looking and expensive lettuce. If not - kudos to you :D

Basic Intro:

### **What is hydroponics?**

Basically, growing plants without the use of a traditional dirt medium and using a nutrient rich water solution. Those mediums range from fiberglass to sand and from fired clay balls to nothing at all. Several branches of hydroponics include aeroponics (using air as the grow medium), aquaponics etc.

### **How do I get started?**

Well, you can buy a kit - but its going to cost you... a lot. Or, you can improvise and create your own kit to suite your needs. My local hydroponic supplier's cheapest multiplant kit is \$185, does 8 plants but is not very versatile and is very compact. It uses the ebb and flow method. They also offer a single pot (bucket) bubbler system for \$50. We are going to combine these two systems into a more versatile and much cheaper system.

### **What are my options**

There are many different methods. NFT (nutrient film technique - stream a thin layer of nutrient solution over the roots) is common among professional kits - a long with ebb and flow (temporary flood your root system and allow to drain). The most interesting method involves suspending your plants in mid-air and spraying the root system very frequently (aka aeroponics). Drip systems are also common and has its own advantages. There are MANY methods - all of which do not use dirt ;)

### **What method is used here?**

By far the simplest and cheapest is a bubbler system. That is, keep your pots filled with your choice of medium just barely above your nutrient solution level -- then keep the solution well aerated. The popping of the air bubbles will keep your medium moist. Remember that more simple and more cheap does not mean less effective ;)

### **What Medium is used here?**

I have used several different mediums in the past. Chopped rockwool, rockwool cubes/blocks/slabs, fired clay and a combination of rockwool and fired clay. This system will work best with chopped rockwool (cubed) or fired clay (extra attention is needed if starting from seed with this medium).

### **Cost?**

I'm in college - so cost is very important to me. This can be a very cheap project if you collect parts slowly. And luckily, the parts list is not long and they're not rare. I believe I have spent a total of \$30 for new materials - however I did buy a few items in bulk and I splurged a little :P

Lastly

### **WHY HYDROPONICS?**

Hydroponically grown foods not only taste better and are more nutritional, you can change the properties of your food, monitor what goes into your food and pollutes less. You can also grow more in less space. This is especially great for those of us that do not have a backyard to grow in. With the right plant selection, you can also keep pests away. I plan on planting a citronella plant - not only do I like the smell of citronella plants, but their oils keep away mosquitoes and other pests.

This design is in no way novel... but, it is easy to do - especially for someone just starting or someone with little money.

Excited? I am. Lets go!



#### Image Notes

1. as the root structure grabs ahold, they will straighten out a bit...



#### Image Notes

1. citronella
2. cilantro
3. novelty peppers... will go well in a salse with the cilantro
4. three shoots of rosemary -- the strongest one will become a rosemary "tree."
5. lemon basil
6. it doesn't look all too pretty yet... it just needs some time
7. Italian basil



#### Image Notes

1. view from inside my apartment... I need to make a box for the air pump to clean up the look of the thing... I also need to wash my window apparently...



#### Image Notes

1. This is a larger scale NFT system being used to grow parsley. Basically, those are plastic rain gutters with a top that has holes for each plant.

## step 1: BOM - Bill of Materials

Okay, I admit the last line of the intro was corny... I like corny though (especially on hot dogs).

### Parts and supplies

1. Opaque container that can hold water with lid (I am using an old 18 gallon storage bin)
2. Mesh Pots (how many depends on what you're growing and the size of your container - I am using 6 5.25" pots) (\$9.90 for 6 heavy duty)
3. Rockwool Growcube (chopped rockwool) (5.95 for three gallons)
4. Growing Solution (I have used Dyna-Grow brand 7-9-5 with excellent results) (\$12.95)
5. Aquarium air Pump (nothing special) (already have/not using)
6. Air Stone(s) and air hose (\$3)
7. See the start growing step for additional instruction

### Recommended but optional

1. Syringe - for making more precise measurements of growing solution (\$2.60 for 60mL)

### Construction Tools

1. Razor Knife
2. Pencil
3. A compass would be nice



**Image Notes**

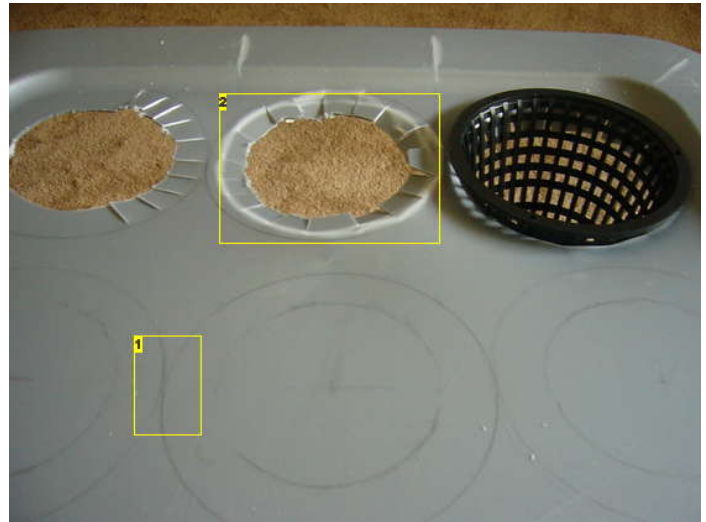
1. Hydroponic growing nutrient concentrate.
2. Rockwool cube medium.
3. 6 pots, 1 air pump and 1 60mL syringe in case.
4. Airline and bar air stone. You don't need this particular type, but they are not too expensive and provide excellent aeration. I will require two - 1 per row. However, I am starting with only 3 pots.
5. cheap plastic container

**step 2: Make a Home For your Pots**

Place your pots upside down on the top of your container lid. Now trace around each pot with a pencil making sure that no lines overlap.

Now, if you have a compass, set it to the radius of the BASE of your pot. Eyeball the center of each circle (or measure if you prefer) and trace another circle inside the larger ones.

Next, cut away the SMALL circle and cut perpendicular relief cuts up towards the larger circle (see picture for clarification). The idea is to push the pot down into the hole and the container lid will hold on tight making a better seal.



**Image Notes**

1. its a tight fit, but they will fit ;)
2. Bending each tab by hand will help the pot fit - and prevent the pot from being crushed.

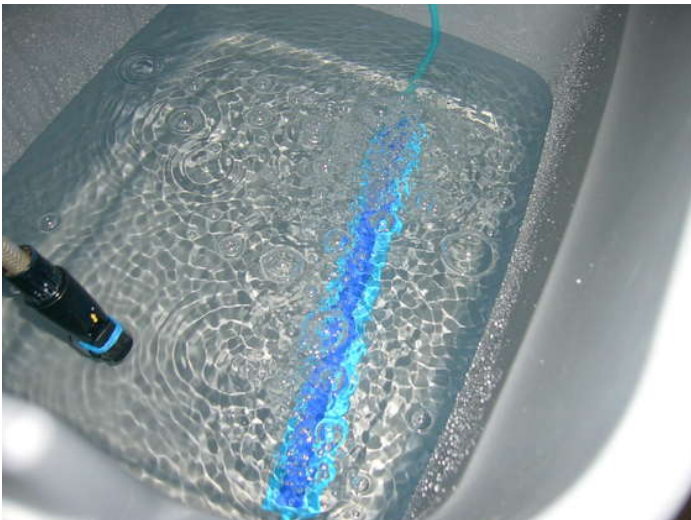


### step 3: Aeration

My container has breather holes in the handles, so I plan on running my airline through there. You may wish to cut a hole in the top, side or other location. It is not imperative where the hole is as much as it is functional. Keep in mind that you want to keep sunlight out of the container and keep rainwater OUT.

Prep your air stone(s) as per the instructions on the packaging (typically rinsing and a water soak). Please use new stones to avoid introducing contaminants.

Connect your air stone(s) to your air line and connect to your aquarium pump.



### step 4: Sterilization

Now, fill your container with water. I am assuming your container is clean and free of debris. Fill to the brim and then ADD 1 TABLESPOON of CHLORINE BLEACH. This is very important as it will kill most intruders you don't want hanging around to cause trouble.

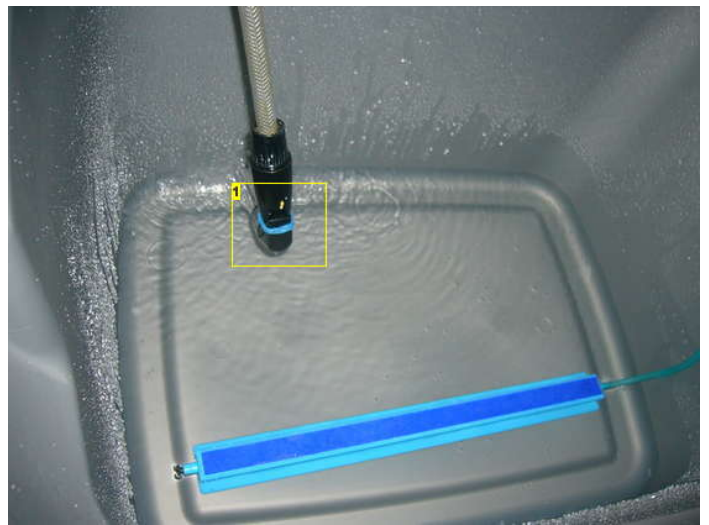
Begin aeration to mix your sterilization solution - put your pots in the container too. After about 20-30 minutes, dump all the water and then allow to air dry completely to get rid of the chlorine.

Once this is done, move on to your initial fill and prepping your medium.



**Image Notes**

1. why do I need a night light in my kitchen?
2. my syringe comes in a handy case... to fill without contaminating your bleach or solution - fill the case with the approximate amount of fluid -- then draw from the case. Place the case in a tall cup as a holder :)



**Image Notes**

1. small rubber band was used to keep the handle depressed for easier filling :D

**step 5: Initial Fill**

Now, if you've made it this far... you're almost done :D

Follow the directions on your nutrient solution bottle. My directions call for 2-3 teaspoon per gallon for RECIRCULATING systems and 1 teaspoon/gallon for bag systems. The reason is nutrient toxicity (more on that later). I will treat this as a bag system with a little more.

When filled to the proper level, my container will be holding about 15 gallons of water. So that requires 15 teaspoons of concentrate. Converting to CCs (the graduation on my syringe), that's about 73cc. I will be adding 80cc of concentrate solution.

So, fill your container with water - begin aerating and then add the proper MEASURED amount of nutrient concentration. At this point, your garden should be where you want it as water is pretty heavy, this goes double for larger systems.



**Image Notes**

1. almost looks like a kamikaze shot :P





**Image Notes**

1. water level just above the bottom of the pot (to start). Notice how bubbles make their way up into the pot. This level should be BELOW the ball of your root system.

**step 6: Introducing Plants and prepping medium**

I will be buying plants that have already started. I want to grow herbs to start off as I love having them fresh for cooking. So obtain your plants. **If you will be starting from seeds, read the next step.**

**A special note about Rockwool**

Rockwool is made from fiberglass... So precaution must be taken. Wear a dust mask while handling and as instructed, soak the medium in water. Water keeps the fibers bound together which further reduces any inhalation risk. The risks involved are no more than handling fiberglass insulation or accessing an attic with fiberglass insulation - just wear a mask ;)

Using a pot, scoop out pot fulls of growing medium. Rockwool will shrink a little, so add a little more - you do not need this for fired clay. If you have 6 pots, take 6 pot fulls of medium and put it into a large bucket, bowl, etc. Fill this bowl with water and estimate how many gallons you added. Then measure off the appropriate amount of nutrient solution. Completely soak the medium.

While the medium is soaking, wash off all of the dirt from your plants. ALL of it - but take care not to damage the root system. Place a little bit of growing medium in the bottom of a pot, then place the plant in and fill the pot with your medium.

Put the lid on your container, and press the pot into an open hole. Repeat for the rest of your plants.



**Image Notes**

1. rosemary
2. chilies... more of a novelty than anything else
3. citronella -- keeps some pests away
4. Italian basil
5. lemon basil
6. this tray came from home depot... I'm not sure if I was supposed to take it - but it worked quite well.
7. cilantro
8. same drill used by optimus prime... Yes, he shops at harbor freight too...



**Image Notes**

1. gently washing -- cradle the plant to prevent breaking the root system.



**Image Notes**

1. clean root ball



**Image Notes**

1. this is a very tight root system - we won't be able to get too much out of this without damage... notice how the tap root (bottom) reached the bottom of the pot -- when the tap root hits something hard, this tells the plant to start growing its roots outwards instead of downwards. Not ideal for our situation, but it will have to do.

**step 7: Starting From Seed**

If the last step applied to you, you can skip this step -- or read for your information ;)

This requires extra materials - mainly rockwool seed cubes and a method to germinate. But basically, you're going to soak the cubes, drop in a few seeds and then place in your pots with the main media. Be sure that you can see the top of the seed cube. **NEVER, put a seed into a dry cube as the dry glass could damage your seed(s)**

You're going to need to water by hand to ensure the seed gets the loving it needs. You may want to place a hood over the pot to make the conditions better.

**step 8: Maintenance**

Every other week, you need to replace your nutrient solution. Otherwise, the water will become toxic to the plant and it will stunt its growth or cause death. Larger operations don't do this as they have adequate filtering and methods of removing toxins generated by the plants - we don't have this. Besides, the plant is going to soak in those nutrients thus removing it from the water anyway ;)

Monitor your fluid levels in between water changes... If the water gets too low, go ahead and top it off.

When you first start, you want to keep the water level just above the base of the pot. The root system will work its way down into the container (out of the pot) and into the water. When this happens, lower the water level slightly (about an inch below the pots) and make sure to keep aeration going. Aeration prevents the root system from becoming "too wet" and having some of the root system exposed to air helps.



## step 9: Options

So what else can you add on or do?

Well, when you're ready - I recommend adding a water level gauge -- basically just a clear hose that connects at the bottom of the container and goes vertical to show the maximum level. This will tell you when to top off. This will be a future instructable.

Want to grow indoors? You're going to need a grow light -- this adds a considerable amount of cost but it may be the only option for those of you in very cold regions.

A simple valve placed at the bottom of the reservoir can make draining much easier. If you can drain into a bucket, you can use this on other plants in your area.

It is a good idea to monitor pH levels and conductivity of your water solution. I plan on going to my local pool store that does free chemical testing for pH levels. Once I have some information about how the pH of the water changes, I won't need to go as frequently.

## step 10: Pests

This is a whole other instructable which will come shortly. But to give you an idea -- there are plenty of non toxic methods (even non chemical) of dealing with pests that may arrive.

## step 11: Lighting

I do not own a lighting system... I wish I did, but they can be quite expensive as these are very specialized systems. Regurgitating....

### What kinds of lighting are used for growing plants?

Most applications use HID (High Intensity Discharge) lights. All HID systems require both a ballast and a bulb in addition to the socket and reflector. You can also use a T5 High output fluorescent bulb which blends the light spectrum. You can use regular T12 fluorescent bulbs for smaller seedlings and cuttings.

### T5?

There are two types of T5 bulbs -- one for blooming and one for growing. Compared to their HID counterparts, they use less heat and all of the spectrum output is used by the plant. The ballast works for both types of bulbs.

### HID?

There are three main types of HID: Metal Halide(MH), Mercury Vapor, and High Pressure Sodium (HPS). For growing, only MH and HPS are used.

### What do I need for HID?

If you're growing leaf/bushy plants (lettuce, greens, herbs) - you want MH all the time. For plants with a vegetative and bloom phase (i.e. tomato, flowering annuals, fruits) - you want to start with a MH and then switch to HPS while the plant flowers and starts producing fruit. If all you're doing is supplementing natural light - use HPS.

### What if I can only afford one light system?

Here are a few options

1. Use a MH system for growth and then an HPS conversion bulb for flowering.
2. Use HPS for flowering and a MH for growth
3. Buy a standard system and upgrade to an enhanced color corrected bulb. Most go for an HPS system because of the higher lumen output per watt compared to its MH counterpart.
4. Buy a switchable system where the ballast can support either type of bulb
5. Use a T5 system with cool spectrum lamps and warm spectrum for flowering.

### What is this conversion bulb?

You can only match a bulb to its ballast (ie MH does not work on an HPS ballast). However, special conversion bulbs will work with the opposite type of ballast.

### Sizing?

HID System Primary Supplement

100watt|||||||||||||||||1'X1'|||||||||||||||||2'x2'  
250watt|||||||||||||||||2'X2'|||||||||||||||||3'X3'  
400watt|||||||||||||||||3'X3'|||||||||||||||||4'X4'  
600watt|||||||||||||||||5'X5'|||||||||||||||||6'X6'  
1000watt|||||||||||||||||6'X6'|||||||||||||||||8'X8'

### T5

2 lamp 2 foot|||||||||||||||||1'X2'|||||||||||||||||1'X2'  
4 lamp 2 foot|||||||||||||||||1'X2'|||||||||||||||||2'X2'  
2 lamp 4 foot|||||||||||||||||1'X4'|||||||||||||||||1'X4'  
4 lamp 4 foot|||||||||||||||||1'X4'|||||||||||||||||2'X4'  
8 lamp 4 foot|||||||||||||||||2'X4'|||||||||||||||||3'X4'

Reflector shape/size is also going to play a role -- and these are approx. measurements ;)

### Costs...

from m little supplier catalogue...

100watt HPS or MH: \$170

400watt ranges from: \$250-\$350

400watt switchable: \$290-\$400

For T5

2 lamp 2': \$125

4 lamp 2': \$190

### Bulb Replacement:

T5: 2' = \$16ea 4'=\$17ea

HID: \$50(100watt MH) -- \$35 (400watt MH) -- \$30 (400 watt HPS)

## Related Instructables



**My Indoor DWC Hydroponics System** by LancePenney



**Understanding Hydroponics** by dutchypoodle



**Hydroponic Drip Garden for Vegetables, Herbs or Flowers** by dirty\_valentine



**Solutions to Hydroponic Problems (Lack of Root-Plant Support)** by trebuchet03



**Make a super-easy hydroponics system!** by Rotten194



**Hydroponic garden - Gravity feed** by agatornz



**hydroponics grow kits - Grow it** by hydroponicsgrowst



**Hydroponic Bubbler** by ruffyen

## Comments

50 comments

[Add Comment](#)

[view all 167 comments](#)



**unlvdating** says:

Nov 18, 2009. 12:07 AM [REPLY](#)

I really appreciate your efforts to write articles that are informative in nature and undertake different issues and happenings in our society. These posts keep me updated with these matters that make me aware on the current situations in our society. Thanks for your dedication on providing relevant articles. I acknowledgment your great work!

Gi Grow



**SerenityGene** says:

Oct 10, 2009. 8:36 PM [REPLY](#)

Rockwool is NOT fiberglass.



**trebuchet03** says:

Oct 31, 2009. 2:33 PM [REPLY](#)

Semantics....

Rockwool is a vitrified substance.... Processing for making rockwool (rotary drum, compressed air jet, etc.) is also used in making many fiberglass varieties.

Throw some glass insulation (from the hardware store) and some rockwool under a microscope and the difference will be clear - there isn't any (except maybe color - which comes from the binding agents used) :p We tend to source rockwool raw materials from waste whereas fiberglass materials we try to recycle from old glass or, as in the case for more structural glasses, we use more virgin materials (silica sand, limestone, soda ash and alumina, feldspar, magnesite, and a few other ingredients I can't recall at the moment).

You should really read more Shakespeare ;)



**SerenityGene** says:

Nov 1, 2009. 10:36 AM [REPLY](#)

Put Glass and Plexiglass under and the difference will be clear - there isn't any... Try using standard housing insulation in a hydroponic setup sometime. There is a reason why No hydroponics site sells it as a grow medium.



**trebuchet03** says:

Nov 1, 2009. 1:15 PM [REPLY](#)

That's right! The difference is in the binder (which is why I mentioned color). The binding agents used in home insulation aren't appropriate for growing plants - and because they're baked in, you can't really remove it :)



**HydroGrower92** says:

Oct 30, 2009. 8:44 PM [REPLY](#)

True.. But alot of people refer to it as fiberglass because of it's structure and texture. But you are right.. It is not fiberglass, it is a result of heated and spun rock.. much like cotton candy, for those who don't know what rockwool is and doesnt know the process of making



**KrackNaka** says:

Jun 3, 2008. 10:16 PM [REPLY](#)

Hey very nice set up you have here. I just have a few questions, living in San Jose, California I can't seem to find a shop that actually sells the mesh/ or netted pots, rockwool, or clay pebbles and same with the nutrients. Is it just Hydro stores that sell these. The other question is have you experimented with other nutrients?



**trebuchet03** says:

A big box hardware store might sell most of that - mesh pots might be for aqua plants...

But, San Jose seems to have a few options for hydroponics specific supplies

<http://www.google.com/search?q=san+jose+hydroponics&ie=utf-8&oe=utf-8&aq=t&rls=org.mozilla:en-US:official&client=firefox-a>

yields

<http://www.precisionhydroponics.com/>  
which is on 132 Kennedy Ave

Give 'em a call, see what they've got :)

As far as other nutrients... not particularly, no.. The stuff I use has worked flawlessly, for me, so I've stuck with it :D

Jun 3, 2008. 10:59 PM [REPLY](#)



**kknudson93** says:

I am getting an air stone. What size would you recommend. There is also a choice in air bar. Suggestions?

Oct 19, 2009. 5:27 PM [REPLY](#)



**Dzakovich000** says:

What do you do to prevent algae and fungus mites?

Aug 11, 2008. 12:30 PM [REPLY](#)



**nuke3ae** says:

I have that same drill from harbor freight. Paid 25 for it, 2 years old and runs just like when I bought it.

Sep 21, 2009. 8:31 AM [REPLY](#)



**albylovesscience** says:

I am also a lover of the fine Canadian meats the godly bacon is like drugs you can't get enough

Aug 6, 2009. 6:24 PM [REPLY](#)



**chanson87** says:

What do you do with your water when you need to change it? Do you change all the water, or just replenish the nutrients?

Apr 22, 2009. 7:27 PM [REPLY](#)



**ki10** says:

Change the whole solution. It's too well-mixed to get just the toxins out without some kind of filter.

Jul 30, 2009. 6:16 AM [REPLY](#)



**eddierath** says:

How far into the solution should the medium be? completely submerged?

Jul 4, 2009. 4:46 PM [REPLY](#)



**skuitarman** says:

Has anyone ever tried this with perlite and/or vermiculite?

Jun 4, 2009. 2:46 PM [REPLY](#)



**tombuss2000** says:

I think it would work just fine but the particle size ends up falling through the mesh basket holes.

Jun 10, 2009. 9:59 PM [REPLY](#)



**peacefulweirdo101** says:

I'm making a hydroponic for my academic success class and I can't seem to find an airstone and rockwool. I checked Home Depot, but they didn't have it. I live in Montebello, Los Angeles. Where do you think I can find it? Oh, and does Miracle Quick Start count as a growing solution. Please help

Nov 30, 2008. 9:18 PM [REPLY](#)



**awang8** says:

Rockwool, I'm not sure, but you can get airstones from pet shops (just make sure they sell goldfish).

Jun 4, 2009. 12:35 AM [REPLY](#)



**corprwhs** says:

I don't know about rockwool, but air stones are available anywhere where aquarium supplies are sold. They are used to aerate water, and thus allow fish to breathe.

May 13, 2009. 9:55 AM [REPLY](#)



**flio191** says:

online, check on ebay for really cheap bags of hydroton and stuff. in chicago we have a hydroponics/home distillery supply store (go figure) to get all my stuff. perhaps there might be a specialty store near you? just do some internet research.

Dec 26, 2008. 7:02 PM [REPLY](#)



**browncar** says:

where in chicago is it? I live there. Would appreciate the info.

Jul 8, 2009. 12:48 AM [REPLY](#)



**Toulouse** says:

I have been considering doing hydroponics for some habanero peppers i have starting. Great instructable! The only reason I really want to do hydroponics is the possibility of increasing the potency of the pepper. Would this happen? I know those illegal 'herbs' that are growing hydroponically are stronger than those grown traditionally. Thanks

May 19, 2009. 12:43 AM [REPLY](#)



**kwynns** says:

what should the water level be compared to where the roots are?

May 16, 2009. 8:31 PM [REPLY](#)



**DELTAWOLF05** says:

So wait if the water touches the roots constantly won't they rot? and would gravel work instead of rockwool?

Apr 11, 2009. 2:12 PM [REPLY](#)



**HoboWhisperer** says:

I've heard that most insects do not like Diatomaceous Earth (DE). It is basically inert, Silicon Dioxide. From what I gather, it does not chemically kill them. For an insect, being exposed to DE is like being coated in razorblades - it works its way into their chitin and delivers death by a thousand paper-cuts. As far as its effects on humans - it is in Bisquick (it has no effect on our physiology). Anyhow, I wonder if this might be an effect pest control?

Mar 1, 2009. 7:40 AM [REPLY](#)



**bwpatton1** says:

It is true Diatomaceous Earth is a pretty much natural pest (get rid of er) they say you can even feed a small dosage to your pets and it kills the pests that live in them.

Apr 4, 2009. 8:02 AM [REPLY](#)



**sectus1** says:

there water plant pots.

Mar 29, 2009. 11:18 AM [REPLY](#)



**Irearick1452** says:

Peppermint Tea, Insecticidal soap, tobacco tea, and others all work in my outdoor garden. The difference here is that anything you add to your plants will end up in your nutrient solution until the day you change it out. That being said, be very careful to check pH levels after using ANY pest control solution. As for the insecticidal soap, I don't think I'd use that in any hydro/aero unit for fear of soap bubbles in the system.

Nov 11, 2008. 10:08 PM [REPLY](#)



**aaronjehall** says:

Aside from oversudzing, I see little difference between soap bubbles and air bubbles. And wouldn't soap be good as a water wetter and initial root cleaner? I use a few tbsp of antibacterial dish soap 2-3x a year on my tomatoes, peppers and peppermint. I also use tobacco tea. Keeps the bugs off the plants and outta the soil.

Mar 14, 2009. 7:24 PM [REPLY](#)



**Irearick1452** says:

Soap bubbles are definitely not wanted in a hydro system. Mostly because it blocks oxgen penetration of the water because of the filming action of the soap itself. Remember, both the roots and the leaves need oxygen uptake for the plant to be healthy.

Mar 24, 2009. 12:11 PM [REPLY](#)



**PetahOsiris** says:

This seems like a great basic setup, love the level of detail and background info in your instructable, top quality stuff. I was wondering though if the fortnightly water changes could be avoided or at least postponed by adding a water pump, perhaps a couple of feet of clear tubing and a UVC Sterilisation lamp as well as an automated system for adding new nutrients (Dispenser on timer) ? Anyone have any thoughts...please do share

Feb 1, 2009. 8:13 AM [REPLY](#)



**FaqMan** says:

Great job. This ible would save alot of money for me thanks for the well made description.

Jan 7, 2009. 2:24 PM [REPLY](#)



**the pro** says:

will miricle grow work as a nutirent solution?

Dec 19, 2008. 10:39 AM [REPLY](#)



**flio191** says:

Depends on what type: and most of the time it's better to go with a nutrient solution, because these nutrient solutions actually consider that there is no soil to acquire nutrients besides the basic stuff: nitrogen, carbon, phosphorous, sulfur, and variants of those...

Dec 26, 2008. 7:04 PM [REPLY](#)



**the pro** says:

Also will a black light work for a light system

Dec 19, 2008. 10:40 AM [REPLY](#)



**tibby\_** says:

where exactly could i get a medium besides on the internet. would a place like lowe's or home depot have it??

Sep 28, 2007. 3:00 PM [REPLY](#)



**xlioilx** says:

you can use jiffy cubes at home depot, manards, lowes or walmart they are also the cheapest alternative and work real good.

Sep 29, 2007. 11:06 PM [REPLY](#)



**pigpen** says:

Jiffy cubes in a bubbler system like this would be a mess in my opinion, but you can get bags of perlite (white light-weight pellets) at the big box stores (in season) or just use stones/rocks whatever. Make sure you rinse the heck out of any medium (except maybe jiffy cubes - sludge) to get all the dust and crap out of them so it doesn't contaminate your reservoir.

Jul 28, 2008. 6:36 AM [REPLY](#)



**Mr. Medang Scheizer** says:

You are absolutely correct. I built a system similar to this. The growth rate is astonishing, but you'd better use something like leca stone or hydroton rocks.

Dec 17, 2008. 1:43 PM [REPLY](#)



**stephenjoens1** says:

SO what does the air stones bubbles make it so the water splashes the rockwool, or how do the plants get the water?

Nov 10, 2008. 4:51 PM [REPLY](#)



**Keith-Kid** says:

OK I'm confused... Are they supposed to NOT get sunlight?

Dec 8, 2007. 2:48 PM [REPLY](#)



**TheDeadMethod** says:

The outside (plants) need sunlight to grow, but if sunlight reaches the water inside, algae and other contaminants will grow, which gets messy and disgusting fast.

Nov 3, 2008. 8:46 PM [REPLY](#)



**Keith-Kid** says:

Ah, thank you, even though I had asked this over a year ago, and had figured it out by now, that still helps!

Nov 4, 2008. 4:40 AM [REPLY](#)



**FreshPineSent** says:

Sunlight is ideal, but if your doing hydroponics, chances are you are indoors.

Oct 26, 2008. 9:16 PM [REPLY](#)



**crafty\_crayons** says:

dam it thats nice

Oct 15, 2008. 12:55 PM [REPLY](#)



**LuAnna** says:

I have used the following two solutions on my garden plants: 1) peppermint tea (cooled) sprayed onto plants using a squirt bottle. 2) a very dilute solution of dish soap and water (about 1 tsp per gallon of water), also sprayed onto plants. I have heard criticisms about the dish soap method- that it may damage some plants, but I have not had this experience myself.

Oct 6, 2008. 2:48 PM [REPLY](#)



**Dfole** says:

Hey what kind of nutrient would be best for a miracle fruit plant, do you know? What you got goin on here is sweet but i want it to have all the right stuff so i need the right nutrition...

Sep 20, 2008. 5:02 PM [REPLY](#)



**josheeg** says:

If a wick method was added during the day or light time plants could take in co2 and the bubbler would not bother the co2 and it could be a precaution if you lost a little watter and your bubbles were not popping high enough. it would seem to me evaporation would make this project need to be checked daily.

Aug 4, 2008. 8:34 PM [REPLY](#)



**thefreshlettuce** says:

Jul 31, 2008. 7:20 PM [REPLY](#)

I've heard that a "tea" made from a tobacco plant, then sprayed on your other plants, will prevent pests, but I've never tried it. Hope this helps!

---

[view all 167 comments](#)